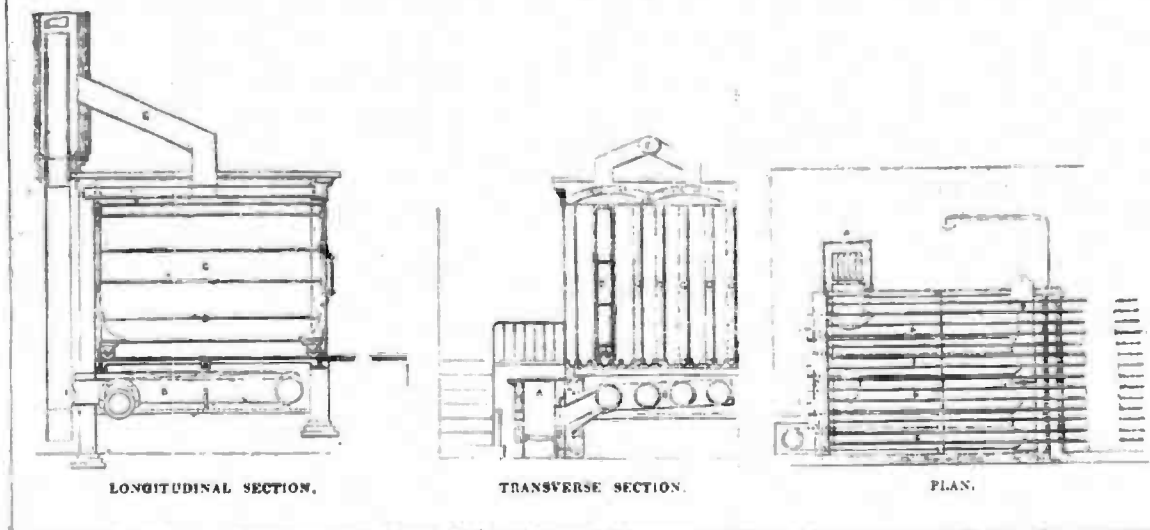


CONSTRUCTION OF DRYING CLOSETS.



open during the time, and the valve in external drain as much closed, to produce even that heat. The second trial, after nine hours' firing, produced 157°, with the different valves similarly disposed. This arrangement was subsequently altered by bringing the heating surfaces forward immediately beneath the drying closet, so that the direct radiant heat might be available. The entrance or external air drain was also closed up, but the upper ventilating tube remained as before, and is brought into constant and successful action by admitting sufficient air from the laundry into the closet at the floor line, to establish a current through the closet in a diagonal line upwards to the ventilating tube, with rapidity enough to carry away the steam as fast as it is formed. An opening or slot, extending the whole length of the front of the closet, viz., 14 feet long + $\frac{1}{4}$ to $\frac{1}{2}$ of an inch in width, affords ample air to maintain this ventilation, and by joining the ventilation tube into the furnace flue, the strong rarefaction within it produced by the heat is a power sufficient perfectly to ventilate the closet; the valve in general being open but one half its range. This system, which I have followed in several public buildings since that time, has not in any instance failed, and is, I conceive, identical with the operation of that described as fixed at Middlesex Hospital, for although the external air-drain is rightly abolished, the same closet yet remains perfectly ventilated, and, I do not doubt, upon exactly the same principles just described; for although the narrow slot may not be provided specially as I have done, yet I must contend that the steam cannot pass away with sufficient rapidity unless influenced so to do by a current of air through the closet powerful enough, by its levity compared with the external air, to carry or pass such steam away. A small amount of apertures will in reality be sufficient, when it is considered how much the volume of the air admitted to the closet at 60 deg., is expanded during its passage through and out of it saturated with steam at over 200 deg., and that this is the operation constantly existing I have evidence corroborative, from a smaller closet I erected (heated by hot water) a few years previous in Park-lane, where sliding entrance and exit air valves were provided in the centres of floor and ceiling. When both were closed the wet clothes were invariably rendered thoroughly hot but never dry in twenty minutes, the whole of the steam that did escape finding its way into the laundry, but on opening the valves, the lower valve (which communicated with a room below), one fourth the area of the upper one, a sufficient current of air was admitted to pass freely away the steam without much loss of heat, but evidently from two distinct trials the establishment of the current was imperative. With a view to promote and effect this ventilation with

the smallest area of openings possible for the entrance of the cool air, I have in several closets assisted the upper or ventilating tube, where it enters the smoke flue by forming a distinct metal cylinder within it, to take up part of its waste heat more locally, or by forming such part of the chimney where the steam tube enters it, with a separating cast-iron with of 2½ or 3 yards in length, dividing the chimney into a smoke flue and a hot steam chamber. The heat so arrested at this point is a powerful accessory to extract the steam from, or induce rapid ventilation through the closet. It is also well, I have found, to extract the steam from two or more openings in the ceiling, in preference to one, which openings should be joined together before entering the smoke flue; also the ceiling or roof (which I generally arch in brick; in fact, no one part should be allowed to be made of combustible material), should have an ascent from the front to the back to facilitate the egress of the steam.

Reference to the explanatory sketches will show we prefer and use a furnace, or fire place, distinct from the ironing stove, the whole of which fire-place is lined with six-inch thick Welsh lumps and the connection of such fire-place with the heated flues is at a depth from the top of it; this arrangement allows coke always to be used: the charge being filled full to the top prevents any cold air from passing over the fire, as in the usual way, into the flues, to the evident waste of the fuel, and it induces a total absence of smoke, creating only a fine drift or powder within them, easily removable. I have been compelled to give a preference to a fire-place for the use alone of the drying-closet, as in two distinct instances I have proved that when the quantity of clothes to be dried has been large and the closet in constant use all day, and say, in five out of six days, the ironing stove, to be fully effective to the closet, has been obliged to be worked at far too great a heat for its own duration, besides overheating the room in which it is placed and where it is generally exposed. It has, consequently, been destroyed infinitely sooner than it would if confined to its own use.

To end these remarks, and reverting to the air-drain principle, there is, I believe, only one way in which it may be efficiently and economically adopted, and it would be as follows:—by constructing an apparatus, containing very extensive heating surfaces (indeed far more extensive than the above method will admit), and making them of a number of vertical or inclined tubes over or in communication with a furnace fire, and of a diameter not too small to impede the current by friction, but yet small enough to enable the stream of air to be fully and not partially heated; these should be arranged that the external air may be propelled through them, diverging upon the clothes to be dried, then away through the

ventilating tube; this would, I think, be the nearest approximation to the operation of nature, but of course can only apply to an establishment where steam or mechanical power is at hand to propel the current, and is not applicable to the great majority of situations.

Drury-lane.

GEO. B. COOPER.

Reference to drawings. The same letters apply to the different figures.

- A Furnace.
- B Heating surfaces.
- C Closet over ditto.
- D Horses over ditto,—all metal, with brass-cased rails, mounted on edge wheels, running on rebated rails within the closet, and wrought ditto rails let flush into stone floor in the laundry outside. The whole of the spaces within the closet, between the rails, are filled in with wire-work at the floor line.
- E Ventilating tube, with valve-rod and valves to regulate it.
- G Cast-iron box posts forming front of closet, rebated both on the front and back faces,—so that, whether the horse is either drawn out or shut in, the front or back plates close the closet effectually, and prevent the escape of heat.
- I Sweeping mouths.
- J Damper to direct current; turned in the same line as pipe, when necessary to cleanse.

BUILDERS' BENEVOLENT INSTITUTION. ANNIVERSARY DINNER.

THE Earl of Carlisle presided on Wednesday last at the second anniversary dinner of the Builders' Benevolent Institution, which took place in the large room of the London Tavern, Bishopsgate-street, where nearly 300 persons were assembled. The arrangements were all excellent.

After the usual loyal toasts.

The Chairman proposed, "Prosperity to the Builders' Benevolent Institution." Those who stood in the position he then occupied, of urging the claims of charitable institutions, could usually appeal to the benefits they had conferred through many years. But that special plea was not open to him. It was only in 1847 that the design to establish the present institution was effected, and this meeting was but the commemoration of its second anniversary. It behoved them, therefore, to make up their lee-way. They must make up in arduous what they wanted in age. The building trade had nothing to exempt it from the obligations of duty and benevolence. Though not initiated in the mysteries of that trade, nor even connected with the ancient society of Freemasons, he knew that no pursuit or calling had rendered more substantial services to every generation of our species. Though the patriarchs of Israel may have only pitched their tents in the plains, the history of the Pyramids showed how early the business of building left